

CITATION

SANDS OF FORVIE AND YTHAN ESTUARY SITE OF SPECIAL SCIENTIFIC INTEREST Aberdeenshire

Site code: 1404

NATIONAL GRID REFERENCE : NK020275, NJ997277

OS 1: 50 000 SHEET NO : Landranger Series 30 & 38
1: 25 000 SHEET NO : Explorer Series 421

AREA : 990.5 hectares

NOTIFIED NATURAL FEATURES

Geological	: Geomorphology	: Coastal Geomorphology of Scotland
Biological	: Coastlands	: Sand dune
		: Estuary
		: Saltmarsh
	: Vascular plants	: Vascular plant assemblage
	: Birds	: Breeding bird assemblage
		: Arctic tern <i>Sterna paradisaea</i> , breeding
		: Common tern <i>Sterna hirundo</i> , breeding
		: Little tern <i>Sternula albifrons</i> , breeding
		: Sandwich tern <i>Sterna sandvicensis</i> , breeding
		: Eider <i>Somateria mollissima</i> , breeding
		: Wildfowl assemblage, non-breeding
		: Eider <i>Somateria mollissima</i> , non-breeding
		: Pink-footed goose <i>Anser brachyrhynchus</i> , non-breeding

DESCRIPTION

The Sands of Forvie are located along the east coast of Aberdeenshire, 20 km north of Aberdeen. These form the 5th largest sand dune system in Britain, and possibly the least disturbed. The adjacent estuary of the River Ythan is one of the least modified in Scotland and the most extensive in the north-east. This coastal site is important, geologically and biologically, for its landforms, habitats, plants and birdlife.

GEOLOGY

Coastal Geomorphology

The Sands of Forvie are of outstanding interest for their remarkable assemblage of coastal landforms, some of which are unique, while others are type examples of much of the dune coastline of north-east Scotland. These include estuarine terraces, a spit complex, sand and raised shingle beaches, large sand sheet and classic parabolic dunes.

South Forvie is an excellent representative, or 'type example', of the sand dune systems of the north-east coast of Scotland with unique large sand sheets. South Forvie has a dynamic interchange of material between frontal dunes and the extensive sand beach and spit complex at the mouth of the River Ythan. The latter is an integral part of the beach and sand dune system and geomorphological research has emphasised the importance of the position of the river outlet channel in controlling the development of the sand bars and spits which form the source of beach nourishment. The large sand sheet at South Forvie contributes to the circulatory sediment system. Dune migration to the west leads to sand losses into the estuary, resulting in sand being recycled by river and tidal flows back to the South Forvie

foreshore and subsequently blown from the beach back onto the sand sheet. The recent geomorphological history of this section of coast strongly suggests ongoing, possibly cyclical, north and north-westwards movement of bare sand sheets or sheets that encroach upon pre-existing dunes in the north. Archaeological evidence supports a northerly migration of sand and this fits with accepted theory of the “scatter and break-up” of northwards migrating sand sheets.

North Forvie is unique in a British context. The sand dune complex has a series of diverse surfaces, including massive sand ridges and classic parabolic dunes. These have spread on to a high plateau of bedrock and glacial till, terminating in relatively high sea cliffs.

The site is of exceptional importance for the study of a wide variety of coastal landforms and processes and its value is enhanced by the availability of extensive research results in other disciplines. These provide much additional and complementary evidence relevant to understanding the development of the coastal landforms in the past, present and future.

BIOLOGY

The site has a diversity of coastal habitats, plants and birdlife. Forvie has extensive sand dunes, with freshwater lochs and a section of rocky sea cliff. The Ythan Estuary, one of the few largely unaltered estuaries of Europe, has intertidal flats and saltmarsh. The dunes hold important breeding colonies of terns and eider duck and the estuary supports important populations of wintering and passage wildfowl and waders. The site also supports diverse assemblages of breeding birds and vascular plants.

Habitats

Sands of Forvie

The dunes, formed largely of lime-deficient, wind-blown sand, show a successional development of vegetation associated with increasing sand stability, from shifting through semi-fixed to fixed dune habitats. Shifting dunes receiving large quantities of blown sand are actively growing and being colonised by marram grass *Ammophila arenaria*. Semi-fixed and fixed marram communities are also found, along with a lichen-dominated dune community and fixed dune grassland. A rare type of dune heath is exceptionally well-developed. Rich in crowberry *Empetrum nigrum* and lichens, this heath is more extensive here than anywhere else in Britain. Humid dune slack vegetation with species such as creeping willow *Salix repens* and cross-leaved heath *Erica tetralix* is a feature of seasonally wet dune hollows.

Ythan Estuary

The component habitats of the Ythan Estuary include extensive intertidal flats and saltmarsh, with brackish swamps and reedbeds along the upper estuary. The saltmarsh, the most extensive in Aberdeenshire, is mainly mid-marsh characterised by red fescue *Festuca rubra* and mud rush *Juncus gerardii*, and upper-marsh dominated by couch grass *Elytrigia repens*, with a small area of low-marsh marked by common saltmarsh-grass *Puccinellia maritima*, seablite *Suaeda maritima* and glasswort *Salicornia* species. The beds of common reed *Phragmites australis* are the largest in any estuary in Aberdeenshire. Stands of sea club-rush *Bolboschoenus maritimus* and bulrush *Schoenoplectus lacustris* are also found.

Plants

The diversity of vascular plants is high, more than 340 species having been recorded. The strong representation of northern coastal species includes rarities such as curved sedge *Carex maritima*, oysterplant *Mertensia maritima* and northern saltmarsh-grass *Puccinellia distans* subsp. *borealis*. Other rare species include small adder's-tongue *Ophioglossum azoricum*, rush-leaved fescue *Festuca arenaria*, purple milk-vetch *Astragalus danicus*, frog orchid *Dactylorhiza viridis*, shepherd's-cress *Teesdalia nudicaulis*, heath dog-violet *Viola canina*, sea wormwood *Seriphidium maritimum* and carline thistle *Carlina vulgaris*.

Birds

The Sands of Forvie has a diverse assemblage of breeding birds. Those associated with sand dunes and saltmarsh include breeding colonies of eider duck, the largest in Britain, and of sandwich, common, little and arctic terns, along with black-headed gull, shelduck, oystercatcher, redshank, lapwing, snipe and curlew. Other species regularly breeding on the site include water rail, fulmar, heron, kittiwake, herring gull and long-eared owl.

The Ythan Estuary, with its extensive intertidal flats, is important, in terms of roosting and feeding, to large numbers of winter waterfowl, part of an internationally important assemblage in the wider area. This includes internationally important numbers of pink-footed geese, representing 8% of the total population of Greenlandic and Icelandic populations of this species. Numbers of eider duck are also of national importance.

NOTIFICATION HISTORY

Part notified under the 1949 Act as Sands of Forvie: 1959, 1971.

Part notified under the 1949 Act as Ythan Estuary: 1971.

Re-notified under the 1981 Act as the Sands of Forvie and Ythan Estuary:
14 June 1984 .

Notification reviewed under the 2004 Act: 8 September 2011.

REMARKS

Measured area of site corrected (from 976.33 ha).

Part of the Sands of Forvie and Ythan Estuary SSSI is designated as the Sands of Forvie Special Area of Conservation (SAC) for the European habitats listed below.

Shifting dunes

Shifting dunes with marram

Humid dune slacks

Lime-deficient dune heathland with crowberry

Sands of Forvie and Ythan Estuary SSSI is designated as part of the Ythan Estuary, Sands of Forvie and Meikle Loch Special Protection Area (SPA) for the birds listed below.

Common tern *Sterna hirundo*

Little tern *Sternula albifrons*

Sandwich tern *Sterna sandvicensis*

Pink-footed goose *Anser brachyrhynchus*, non-breeding

Waterfowl assemblage, non-breeding

Eider *Somateria mollissima*, non-breeding

Redshank *Tringa totanus*, non-breeding

Lapwing *Vanellus vanellus*, non-breeding